

Workshop: Challenges and Solutions for Distributed Scrum Teams

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Abstract

Agile software development is a growing trend as companies look for ways to improve quality, reduce time to deliver software to the market, and more accurately deliver software that meets the needs of their clients. At the same time, globalization, distributed software development work, and telecommuting are rapidly changing how software development teams work. This session captures the experiences of a community of 1,300 Scrum team members from across IBM business units and geographies. The diversity provides a unique perspective into a broad array of challenges specific to working in a fully distributed software development environment. In this workshop, participants will learn the basics of Scrum as an Agile software development framework. They will engage in exercises to reveal the communications and time zone challenges that distributed teams experience and the pros and cons of various solutions to the challenges. Participants will engage in a simulation where they will create a project as a member of a globally-distributed team. Participants will discuss the challenges they encounter and will practice some of the techniques that can help improve their success.

1. Topic, Theme and Goals

When Ken Schwaber first introduced Scrum at the 1995 International Conference on Object Oriented Programming, Systems, Languages and Applications (OOPSLA), it was common to have collocated development teams [1]. Much of the available documentation on Scrum reflects those roots. However, for an increasing number of software projects, collocation is no longer the norm—in fact, recent surveys have shown that only 45% of agile teams are collocated, the rest are distributed in some manner [2].

While most people would agree that collocation and face-to-face communication are ideal, today's business environment often demands that managers organize globally distributed development teams. Today's software development organizations are more likely to outsource at least part of their development. They are also more likely to expand their business into other countries—including high growth countries like Russia and China [3]. Acquisitions are likely to result in distributed teams as the combined companies begin working together to integrate their products. Companies are searching for knowledge, intellectual property, and innovation beyond geographic boundaries [4]. And with increasing access to high-speed Internet service and improvements in distance collaboration tools, even employees within the same city are more likely to telecommute and work with their colleagues in a distributed fashion at least part of the time [5].

As a result, teams need to figure out how to work effectively as part of a distributed team. Distributed teams experience the same challenges as collocated teams, plus they have some extra ones. Many of the problems are communication issues at their core because of the added difficulties posed by distance.

Edward T. Hall, a renowned social anthropologist, argued that in a normal conversation more than 65 percent of social meaning occurs through the nonverbal channel [6]. In a remote meeting by telephone since the typical nonverbal cues to meaning are not available, only 35 percent of the normal communication channel is available. As a result remote team communication can be challenging. Even when team members are on the same continent or in the same region, not working face-to-face can complicate communication. The complexity increases with distance as time zones, language barriers, and cultural differences get in the way.

Given Scrum's roots in collocated teams, this means Scrum practices need some extension and reinterpretation to fit the way we work today. In October 2008, the IBM Scrum Community began working on *A Practical Guide to Distributed Scrum*, a book that captures experiences and suggestions from IBM's Scrum practitioners and Scrum teams outside of IBM who are working with distributed teams [7]. Our goal is to share the results of that work, to share the challenges that we face in helping teams in their adoption of agile methods and to propose solutions that teams can adapt and adopt. The goal of this session is not to prescribe solutions, but to present options that teams can use to decide what will work best for them in their situation.

Upon completion of this workshop, participants will be able to:

- Identify the basic roles, artifacts, process and principles of Scrum
- List reasons that teams are becoming more distributed
- Describe some of the challenges related to working as a distributed team
- Identify some of the positive actions that distributed Scrum teams can take to improve their success

2. Target Audience

The target audience for this session is software engineering faculty, students and practitioners who are likely to work with distributed team members and in particular those who are adopting Scrum to manage their agile projects. Software developers, testers, information developers, team leaders, managers and others who telecommute, work with outsourced teams or work as part of a fully-distributed team will benefit from the practical guidance provided in this session. This workshop applies not only to those working in large-scale Software Top 100 companies, but also to smaller companies that perform contract work for larger, distributed organizations and to small companies that find value in allowing their software development team members to telecommute. Those who manage distributed teams would be interested in this session as a way to scale agile methods to benefit their organizations. This session provides information on how Agile and Scrum software development apply to collocated teams before introducing the more advanced topic of using Agile with distributed teams.

Activities and Format

This workshop combines lecture, discussion and hands-on simulated experiences to reinforce the key goals and objectives.

Lesson 1: The Basics of Scrum – 30 minutes

The workshop begins with a brief introduction to the Agile Manifesto and the basics of Scrum as defined by the Scrum Guide [8, 9]. This topic provides an overview of the roles, artifacts, process and principles of Scrum.

Supporting Objective: Upon completion of this lesson, participants will be able to identify the roles, artifacts, process and principles of Scrum.

Lesson 2: The Business Pressures and Opportunities for Distributed Scrum – 15 minutes

Lesson 2 addresses the business pressures and opportunities that have shifted software development from primarily collocated to primarily distributed.

Supporting Objective: Upon completion of this lesson, participants will be able to list the reasons that software development teams are becoming more distributed.

Lesson 3: Challenges of Working a Distributed Team—30 minutes

Lesson 3 addresses the different types of distribution that teams may experience and the increase in challenges as a result of increased distribution. This session will introduce language and cultural issues and provide an opportunity for attendees to discuss the meaning of symbols, images and written statements that highlight challenges. This lesson will discuss the pros and cons of different methods of communication: teleconference, instant message, documentation and video conference. Attendees will engage in an exercise that demonstrates the impact of relying on documentation.

Supporting Objective: Upon completion of this lesson, participants will be able to identify the challenges and approaches of working as a distributed team.

Lesson 4. Approaches to Handling Time Zone Issues—30 minutes

One of the most challenging problems for distributed teams is working together as a team when there is no overlap or limited overlap in the team members' normal working hours. This lesson will address approaches to handling time zone issues, including taking a "liaison" approach, alternating meeting times and "sharing the pain."

Attendees will be grouped into different teams and given personas that they will use to determine the best time for members of their teams to attend a regular meeting. During discussion, participants will explain why they chose the approach they chose.

Supporting Objective: Upon completion of this lesson, participants will be able to identify pros and cons of techniques for handling time zone issues.

Lesson 5. Experiencing the Worst Case Distributed Scenario—60 minutes

Lesson 5 is an exercise in which Scrum Teams practice working as a geographically distributed team with some team members that have no overlap in their normal working hours. Instructors will organize participants into teams and provide participants with information about their role (development Team member, Product Owner, or Scrum Master), their geographic location, their normal working hours and their personal constraints.

Instructors will provide the teams with project construction kits and a prioritized Product Backlog. Each team will decide when and how they are going to meet and how they are going to work together to deliver a completed project at the end of a simulated Sprint. Team members will engage in a simulation of each aspect of Scrum, including Sprint Planning, working together during a Sprint, attending Daily Scrums, Reviewing their work at the end of the Sprint and participating in a distributed Retrospective.

Supporting Objective: Upon completion of this lesson, participants will be able to identify challenges they may experience when working as a distributed team.

Lesson 6. Summary of Techniques for Distributed Scrum—15 minutes

The session will conclude with a summary of techniques for working together successfully as a distributed Scrum Team.

Supporting Objective: Upon completion of this lesson, participants will be able to identify some of the positive actions that distributed Scrum teams can take to improve their success.

Time Needed for the Workshop

This workshop is best delivered as one 3-hour session.

References

[1] Schwaber, K. SCRUM Development Process. OOPSLA'95 Workshop on Business Object Design and Implementation, http://www.tiac.net/users/j_suth/oopsla/oo95summary.html, December 10, 1995.

[2] Ambler, S.W. (2009). *November 2009 State of the IT Union Survey*. <http://www.ambyssoft.com/surveys/stateOfITUnion200911.html>.

[3] Borga, M. "Trends in Employment at U.S. Multinational Companies: Evidence from Firm-Level Data." Brookings Trade Forum - 2005, pp. 135-163, September 2005.

[4] Criscuolo, C. H. *Global Engagement and the Innovation Activities of Firms*. Cambridge: National Bureau of Economic Research, 2005.

[5] CompTIA. *Summary of "Trends in Telecommuting: Organizations are Realizing Benefits and Addressing Challenges,"* <http://www.comptia.org/sections/research/reports/200809-TelecomSummary.aspx>, 2008.

[6] Hall, Edward T. *The Silent Language*. Garden City, N.Y.: Doubleday, 1959.

[7] Woodward, Elizabeth, Steffan Surdek and Matt Ganis. *A Practical Guide to Distributed Scrum*. Boston, MA: IBM Press, 2010.

[8] Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., et al. (2001, February). *Manifesto for Agile Software Development*. Retrieved 11 30, 2008, from Manifesto for Agile Software Development: <http://agilemanifesto.org/>

[9] Schwaber, Ken. (2009). Scrum.org. The Scrum Guide. <http://www.scrum.org/scrumguides/>